PATENT

. IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

    Philippe Armangau, et al.

Serial No.: 10/603,411   Confirm: 4172

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For: Replication of Snapshot Using a File
       System Copy Differential

Group Art Unit: 2168

Examiner: Jay Morrison

Atty. Dkt. No.: EMCR:0095NPU

Technology Center 2100

REPLY BRIEF TO THE BOARD OF PATENT APPEALS AND INTERFERENCES

Commissioner for Patents
PO Box 1450
Alexandria, Virginia 22313-1450

Sir:

. This Reply Brief is in response to the Examiner's Answer dated Aug. 9, 2007, and is intended to address only new issues raised in the Examiner's Answer.

With respect to the 35 U.S.C. 102(e) rejection of appellants' claims [8, 33, and 54], the Examiner's Answer on pages 15 to 16 suggests that <u>Goldstein</u> is describing a loop of an incremental backup process over the sequence of copies, and another loop of difference lists indexing the blocks. In such a case, however, the loop indexing the blocks to create a difference list would be an <u>inner</u> loop, and the incremental backup process would be an <u>outer</u> loop, because the incremental backup process is continued successively over the difference lists. (<u>Goldstein</u>, paragraph [0024], lines 10-13, and paragraph [0043], lines 10-14.) This is the opposite of what is being called for in the appellants' claims 8, 33, and 54. This same confusion of "inner" and

"outer" occurs in the Examiner's Answer on page 19 with respect to the 35 U.S.C. 103(a) rejection of appellants' claims 16 [and 58].

With respect to the 35 U.S.C. 103(a) rejection of appellants' claims 9 and 34 over Goldstein in view of Ohran, the Examiner's Answer on page 17 says that the references to the data blocks A through E (of Ohran paragraph [0044], lines 7-11) are equivalent to the index claimed by the appellants. Appellants respectfully disagree. The fact that the subscripts "x" and 'y" represent corrupted data as used in a patent specification (Ohran, page 4, paragraph [0037]) is not a disclosure of a snapshot copy facility having an index for each snapshot copy for indicating blocks of data that are known to be invalid in the snapshot copy. Instead, it is a disclosure of an example in which data blocks D_x and D_y are indicated by the patent draftsman to be invalid. Nor does this example in Ohran satisfy the limitation of "scanning the index for the specified younger one of the snapshot copies, and when the index indicates that a block is not known to be invalid, ..." in the appellants' claimed method of operating the snapshot copy facility.

The Examiner's Answer on page 17 further presumes that "only blocks which are not known to be invalid (i.e. valid data blocks) are included when scanning the index" when Goldstein produces a list of blocks that have changed between the snapshots. However, neither Goldstein nor Ohran scans an index for a specified younger one of the snapshot copies, such that the index indicates that a block is not known to be invalid. In the appellants' claims, this

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scanning of the index is separate and distinct from the additional and following claimed operation of "determining whether the block has changed between the specified older one of the snapshot copies and the specified younger one of the snapshot copies." Moreover, the fact that there is an example in Ohran where "At this point, it is determined that the data 20b (A_1, B, C, D_1, E) represents valid, non-corrupted data." (Ohran, paragraph [0045], lines 1-2)" does not suggest the appellants' claimed scanning of an index for each snapshot copy for indicating blocks of data that are known to be invalid in the snapshot copy. In Ohran's example, the determination that the data 20b (A_1, B, C, D_1, E) represents valid, non-corrupted data is performed by a different method; namely, by rolling back the data of the mass storage device to a state prior to the occurrence of the corrupted data block, as described in Ohran paragraph [0044].

Page 18 of the Examiner's Answer refers to a meta bit map. A meta bit map is found in appellants' claims 16, 41, and 59.

With respect to the 35 U.S.C. 103(a) rejection of claims 17, 42, and 60 over Goldstein in view of Ohran, appellants respectfully disagree with the argument in the Examiner's Answer on page 20 for similar reasons in that neither Goldstein nor Ohran disclose both the claimed first index (indicating blocks of data that have changed between snapshots) and the claimed second index (indicating blocks of data that are not in use in each snapshot). In the context of appellants' claims 17, 42, and 60, from the claimed use of the first index in combination with the second index, a block can be in use or not in use, and if in use, the block can be changed or not

changed between snapshot copies. Therefore, the state of a block being in use or not in each

snapshot copy is different from the state of a block being changed or not between snapshot

copies.

In view of the above, the rejection of the appellants' claims should be reversed.

Respectfully submitted,

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